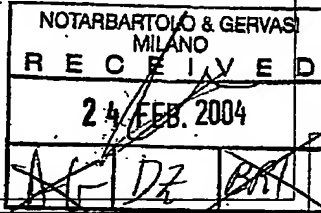


From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

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NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing
(day/month/year)

20.02.2004

Applicant's or agent's file reference
3074PTWO/AG/a

IMPORTANT NOTIFICATION

International application No.
PCT/EP 02/00319

International filing date (day/month/year)
15.01.2002

Priority date (day/month/year)
15.01.2002

Applicant

CONSORZIO INTERUNIVERSITARIO PER LO SVILUPPO ...

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international
preliminary examining authority:



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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Rec'd PCT/PTO

15 JUL 2004

Applicant's or agent's file reference 3074PTWO/AG/1a		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 02/00319	International filing date (day/month/year) 15.01.2002	Priority date (day/month/year) 15.01.2002	
International Patent Classification (IPC) or both national classification and IPC D21H25/18			
Applicant CONSORZIO INTERUNIVERSITARIO PER LO SVILUPPO ...			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 2 sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand 12.08.2003		Date of completion of this report 20.02.2004	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Karlsson, L Telephone No. +49 89 2399-8424 	

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 02/00319**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-10 as originally filed

Claims, Numbers

1-11 received on 27.01.2004 with letter of 23.01.2004

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP 02/00319

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	3,4,6-8,11
	No: Claims	1,2,5,9,10
Inventive step (IS)	Yes: Claims	
	No: Claims	1-11
Industrial applicability (IA)	Yes: Claims	1-11
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. The present invention pertains to a method for paper deacidification wherein, e.g. old books are treated with an alkaline suspension comprising suspended particles as defined in the present claim 1 having a dimension between 10 nm up to 2 μ m. The solvent for the suspension may be water, ethyl ether, acetone or alcohols and their mixtures.

2. The present set of claims do not meet the requirements of Articles 6 PCT for the following reasons:

2.1 The following wordings have not been clearly defined due to the usage of the underlined relative features:

"high temperature homogeneous phase reaction" (cf claim 6).

"giving a low solubility in a nanosized aqueous core" (cf claim 8).

2.2 The meaning of the wording "Use of the suspension as:.....alkaline reservoir" is not understood. Needless to say, but the claims should contain technical features which shall define the invention in a clear and concises manner. If some features of the claims does not have a clear technical meaning it seems as they should be omitted from the claims.

2.3 The exact technical meaning of the wording "consolidation of porous material" of claim 16 is not understood.

3.1 To use a alkaline suspension having particle of metal oxides, hydroxides or carbonates within the size range of 10 nm to 2 μ m in a solvent as defined in the present claim 1 for deacidification purposes is commonly used and thus well-known. E.g. the documents D1:EP-A-1 001 084 and D5:US-A-6 235 150 disclose all an alkaline suspension as defined in the present claim 1 (see D1, col.6, line 55 to col.8, line 22, claims 1-6,col.4, lines 14-25; see D5, claims 1, example 1).

The present claim 1, as well as claims 2,5,9 and 10 hence lacks novelty with regard to the disclosures of D1 or D5 (Art.33.2 PCT).

3.2 To use suspended particles of basic oxides, hydroxides or carbonates having the size range as defined in claim 1 are known from D2:US-A-4 522843, D3:US-A-6 080 448 and D4:WO-A-99 01377. Although D2 to D4 all use a different solvent, e.g. a halogenated hydrocarbon, the skilled person would still get an indication that the defined basic compounds are frequently used for de-acidification purposes (see D2, claims 1-24; examples 6,7; see D3, claims 1-17, col.3, line 16 to col.4, line 48; see D4, claims 1-16):

3.3 The rest of the dependent claims do presently not seem to add any novel and inventive matter with regard to the disclosures of the above mentioned documents and the documents D6:EP-A-0 543 372 and D7:EP-A-1 134 302 (Art.33.2 and 33.3 PCT). However, a combination of these features may nevertheless meet the requirements of Article 33.3 PCT.

Claims

- 1) Basic suspension wherein the suspended particles have dimensions comprised between 10nm up to 2 μ m.
- 2) Basic suspensions according to claim 1 wherein the suspended particles have dimensions comprised between 50nm up to 500nm.
- 3) Basic suspensions according to claims 1 and 2 wherein the suspended particles are basic oxides or hydroxides or carbonates or their mixture.
- 4) Basic suspensions according to claim 3 wherein the suspended basic oxides are chosen in the group consisting of: Li₂O, Na₂O, K₂O, MgO, CaO, SnO, SnO₂, PbO, Pb₂O, Pb₂O₃, BiO, Bi₂O₃, Sb₂O₃ or their mixtures.
- 5) Basic suspensions according to claim 3 wherein the suspended basic hydroxides are chosen in the group consisting of : LiOH, NaOH, KOH, Mg(OH)₂, Ca(OH)₂, Al(OH)₃, Sn(OH)₂, Sn(OH)₄, Pb(OH)₂, Bi(OH)₃, Sb(OH)₃ or their mixtures.
- 6) Basic suspensions according to Claim 3 wherein the suspended basic carbonates are chosen in the group consisting of: Li₂CO₃, Na₂CO₃ deca-hydro, Na₂CO₃, K₂CO₃, MgCO₃, CaCO₃, PbCO₃, anhydro and basic, Bi₂O₂CO₃ or their mixtures.
- 7) Basic suspensions according to Claims 1 – 6 wherein the solvents are chosen in the group consisting of: water, ethyl ether, acetone and alcohols and their mixtures.
- 8) Basic suspension according to claim 7 wherein the alcohols are chosen in the group consisting of: methanol, ethanol, 1-propanol, 2-propanol, butanol, pentanol, and their mixtures.

- 9) Basic suspension according to Claims 1 – 8 consisting of: $\text{Ca}(\text{OH})_2$ hydroxide particles suspended in 1% water and 99% 1-propanol or 2-propanol (w/w).
- 10) Process for the preparation of the suspensions according to Claims 1 – 9 by vigorous stirring of the particles to be suspended in the appropriate solvent (or solvents mixture), if necessary with the aid of a sonicator or ultra-sonicator or with the aid of a homogeniser
- 11) Process according to Claim 10 wherein the particles to be suspended are obtained by high temperature homogeneous phase reaction.
- 12) Process according to Claim 10 wherein the particles to be suspended are obtained by slaking of the oxides.
- 13) Process according to Claim 10 wherein the particles to be suspended are obtained by mixing two water in oil microemulsions, giving a low solubility salt in nanosized aqueous core.
- 14) Use of the suspension according to claims 1- 9 in paper deacidification processes, as neutralising agent and also as alkaline reservoir.
- 15) Process for paper deacidification wherein suspensions according to claims 1 - 9 are applied to the papers to be deacidified by: spraying, immersing, brushing, or by mass-deacidification process.
- 16) Use of the suspensions according to Claims 1 – 9 in processes for the consolidation of porous materials.